

REMARKS**1. Status of claims**

Claims 9-12 are pending.

2. Claim rejections under 35 U.S.C. §§102, 103

The Examiner rejected claims 9-12 under 35 U.S.C. §102(b) as being anticipated by and under 35 U.S.C. §103(a) as being unpatentable over Norwood *et al.*, US 4,312,967 ("Norwood"). Applicants traverse this rejection.

The Examiner pointed to Norwood as teaching a polymerization process similar to that disclosed in the present specification. One embodiment of the process of Norwood, Example II, Run 14 (which differed from the present specification's disclosure at least in having a catalyst activation temperature of 677°C (1250°F), versus the present specification's teaching of 900°F-1050°F) resulted in a polymer having a density and a high load melt index within the ranges presently recited by claim 9. Norwood is silent about the critical shear rate for the onset of melt fracture of its Run 14 polymer. The Examiner alleged the critical shear rate for the onset of melt fracture of Norwood's Run 14 polymer would be within the range recited by claim 9. The Examiner also pointed to Norwood's teaching of activation temperatures as low as 400°C (752°F) as allegedly indicating Norwood disclosed a polymer having a critical shear rate value greater than about 1200 sec⁻¹.

However, Norwood is directed to producing high-density ethylene polymers having a high melt index and good stress crack resistance in high yield (Norwood, col. 1, lines 62-65). Norwood does not quantify either "high" in high melt index or "good" in good stress crack

resistance. Therefore, whether a catalyst of Norwood which was activated at temperatures within the recited range or as low as 752°F would produce polymers with a high load melt index and a critical shear rate within the ranges recited by claim 9 cannot be determined.

Another difference between the processes of Norwood and the present specification, which would be expected to lead to differences in the products, lies in the preparation of the silica-titania catalyst. The present specification points to Dietz, US 3,887,494 ("Dietz") as teaching how the silica-titania catalyst can be prepared (p. 7, lines 19-21). Dietz teaches coprecipitation of the titania with the silica by adding a titanium compound to an acid, adding a silicate to the acid, and then converting the titanium compound to titania (Dietz, col. 2, lines 60-64).

Norwood teaches several techniques of silica-titania catalyst preparation. In Example II, Run 1 involves the coprecipitation of sodium silicate and titanyl sulfate in sulfuric acid (Norwood, col. 6, lines 40-53), and Run 14 involves preparation of silica carrier followed by slurry impregnation of catalyst (Norwood, col. 7, lines 12-19). The catalyst of Run 1 thus more closely resembles the catalyst Applicants used in preparing the products of present examples I-II. However, the catalyst of Run 1 produced a polymer having an HLMI value of 0.14, which is below the range recited by present claim 9 (Norwood, Table I).

Norwood also does not guide the skilled artisan to the process conditions conceived by the present inventors. For example, Norwood teaches the use of hydrogen in the reactor (col. 6, lines 35-37). The present specification teaches the absence of hydrogen from the reactor (p. 14, lines 6-7).

It would be apparent to the skilled artisan that the production of polymers meeting the limitations of the present claims cannot be considered inherent to following the teachings of

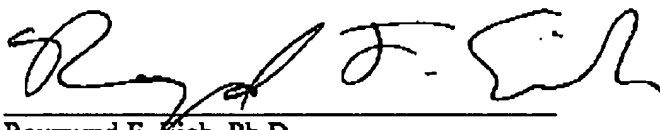
Norwood. It cannot be predicted from the teachings of Norwood that polymers prepared according to the present specification would have the properties recited by present claim 9 and, further, it cannot be concluded that polymers prepared by other techniques would have the properties recited by present claim 9. Norwood does not guide the skilled artisan to contemplate the process conditions required to generate a polymer having the properties recited by present claim 9. Therefore, Applicants have demonstrated that the polymers of Norwood do not necessarily or inherently possess the characteristics of polymers that meet the limitations of claim 9. Applicants therefore request this rejection of claims 9-12 be withdrawn.

3. *Conclusion*

Applicants submit that pending claims 9-12 are in condition for allowance. The Examiner is invited to contact the undersigned patent agent at (713) 934-4065 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,

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